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VOLUME 3, NUMBER 5  
MAY 1985

EDITED BY: ROD GOWEN  
 CHAIRMAN: DICK WAGNER  
 U/CHAIR/SEC: VINCE LYON  
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 PR OFFICER: BOB EVANS  
 LIBRARIAN: LAURA GOWEN

$$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \frac{1}{7}, \frac{1}{8}, \frac{1}{9}, \frac{1}{10}, \frac{1}{11}, \frac{1}{12}, \frac{1}{13}, \frac{1}{14}, \frac{1}{15}, \frac{1}{16}, \frac{1}{17}, \frac{1}{18}, \frac{1}{19}, \frac{1}{20}, \frac{1}{21}, \frac{1}{22}, \frac{1}{23}, \frac{1}{24}, \frac{1}{25}, \frac{1}{26}, \frac{1}{27}, \frac{1}{28}, \frac{1}{29}, \frac{1}{30}, \frac{1}{31}, \frac{1}{32}, \frac{1}{33}, \frac{1}{34}, \frac{1}{35}, \frac{1}{36}, \frac{1}{37}, \frac{1}{38}, \frac{1}{39}, \frac{1}{40}, \frac{1}{41}, \frac{1}{42}, \frac{1}{43}, \frac{1}{44}, \frac{1}{45}, \frac{1}{46}, \frac{1}{47}, \frac{1}{48}, \frac{1}{49}, \frac{1}{50}, \frac{1}{51}, \frac{1}{52}, \frac{1}{53}, \frac{1}{54}, \frac{1}{55}, \frac{1}{56}, \frac{1}{57}, \frac{1}{58}, \frac{1}{59}, \frac{1}{60}, \frac{1}{61}, \frac{1}{62}, \frac{1}{63}, \frac{1}{64}, \frac{1}{65}, \frac{1}{66}, \frac{1}{67}, \frac{1}{68}, \frac{1}{69}, \frac{1}{70}, \frac{1}{71}, \frac{1}{72}, \frac{1}{73}, \frac{1}{74}, \frac{1}{75}, \frac{1}{76}, \frac{1}{77}, \frac{1}{78}, \frac{1}{79}, \frac{1}{80}, \frac{1}{81}, \frac{1}{82}, \frac{1}{83}, \frac{1}{84}, \frac{1}{85}, \frac{1}{86}, \frac{1}{87}, \frac{1}{88}, \frac{1}{89}, \frac{1}{90}, \frac{1}{91}, \frac{1}{92}, \frac{1}{93}, \frac{1}{94}, \frac{1}{95}, \frac{1}{96}, \frac{1}{97}, \frac{1}{98}, \frac{1}{99}, \frac{1}{100}$$

on: THURSDAY, MAY 2, 1985  
at: 7:30 P.M.  
in: COMMUNITY ROOM  
FAR WEST FED S & L  
OREGON CITY SHOPPING CTR

We hope to see all of you there.  
There will be a lot of things to  
see and hear about.

BE SURE TO COME!  
BRING A FRIEND!  
YOU WILL ALWAYS  
PICK UP USEFUL  
INFORMATION!!

RE THERE>>>

CLACKAMAS  
COUNTY  
AREA

E  
USERS

THE  
PLOTTER

COMPUTING THE FUTURE--  
IN CLACKAMAS COUNTY.

ॐ नमो भगवते वासुदेवाय ॥

**THE**

AT THE MAY MEETING THERE WILL BE  
SEVERAL THINGS OF INTEREST TO  
ALL WHO ATTEND.

DENNIS JURRIES WILL HAVE HIS XY  
PLOTTER.

ROD GOWEN WILL HAVE THE DUAL  
DRIVE A & J WITH THE NEW PAR-  
ALLEL I/F AND PRINTER. ALSO THE  
GESSO EPROM PROGRAMMER WILL BE  
THERE. IT WILL NOT BE OPERATING  
YET, BUT IT WILL BE OPERATING BY  
THE JUNE MEETING.

DICK WAGNER ALWAYS HAS SOMETHING  
TO SEE, AND THERE MAY BE OTHERS  
THERE AS WELL.

Figure 1 illustrates the experimental setup. A participant is seated at a table, looking at a video screen. The screen shows a target (a small circle) and a starting position (a larger circle). A horizontal line indicates the distance between the starting position and the target. The participant's hand is positioned at the starting position. The video screen is connected to a computer system. The participant is instructed to move their hand from the starting position to the target.

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-IN THIS ISSUE-

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10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1

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## FROM THE CHAIRMAN'S COMPUTER--

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DICK WAGNER

The April meeting was the best so far this year. Members who were not able to attend missed a talk by member Dennis Jurries about the manufacture of silicon wafers. As this material is the key to miniturization of computers and the demise of vacuum tubes in the computer industry, we were fortunate to have a first hand discussion of this important material.

New products for our computers are rather mind boggling and now we have CHOICES in many products in place of wondering if there will be any backup for our machines. Every meeting missed may just be the one where something you have been waiting for might be discussed. Moral-try to make every meeting.

As Tom Bent, Editor of Sync-Ware news, so aptly puts it, "When the Speedwagon comes by, jump on. Dont get left in the dust!"

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## SECRETARY'S

## SECRETS?

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Our APRIL MEETING was held on April 4th, 1985, at 7:30 P.M. in the Community Room of Far West Federal Savings and Loan, in the Oregon City Shopping Center. We had 24 people attending. Several of them were new to our group. We extend our welcome to them. One was a new member, SID WYNCOOP, welcome to the group SID!!!

After the announcements and the Treasurer's report, we went on to discuss the possibility of a group potluck picnic some Sunday this summer. The idea was tabled for the present.

There was some talk about what new publications we should look into for possible subscriptions. No descision made.

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The EPROM PROGRAMMER was then brought up. Rod Gowen said that GESSO SOFTWARE of California was going to send one to us to see.

There was proposed and passed, a motion that we have no meeting in JULY this year as we did last year.

Our newsletter Editor, Rod Gowen, wants a short vacation from The Plotter, so we will have a combined JUNE-JULY-AUGUST issue this year.

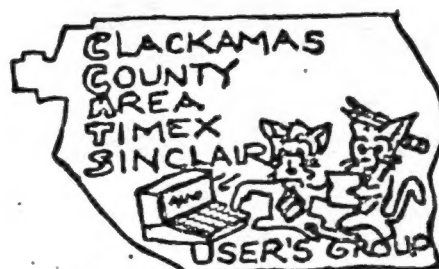
We were also up in the air as to our meeting place in the future, but now it looks as though we have a home at Far West as they are not selling.

The meeting was adjourned at 8:10 P.M. and we had a nice talk from DENNIS JURRIES on the making of silicon wafers.

There was quite a bit of new things to see. The ROTRONICS WAFADRIVE was there, as was the A & J MICRODRIVE.

That's about all the SECRETS for this time, see you next time.

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## INFORMATION!!

Here is a great tip for all TS 2068 owners who are finding that the paint is wearing off the top of the keys on your computer.

Buy a sheet of plastis laminate (like you would put your SS card or a picture in to protect it) from any store for about \$2. Cut pieces to fit the keytops and peel off the backing and stick them on. You'll be many years trying to wear through that!!

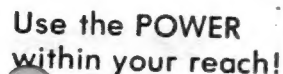
Thanks to L. STRANSKY for this tip.

FROM THE  
EDITOR'S DESK-

As EDITOR of THE PLOTTER, I take a lot of pride in what I try to do each month for YOU, the members of CCAT/S and readers of this publication. I can only do so much in the time I have to put it together and get it out to you on time. I think that I can safely say that I have one of the best records around for getting this newsletter to you on time and with what usually ends up being a pretty interesting group of articles etc. However, it comes right back to the fact that there are about three or four of us that end up doing all of the work and writing. I was hoping that all of the past editorializing I have done would have done some good, but it hasn't.

User groups are, for the most part, run by VOLUNTEERS who depend upon help from ALL the other members, be they novice or expert. Whether it's a "Hello", an article or program or a helping hand with the newsletter (paste-up, mailing, printing, etc etc), INPUT is going to keep YOUR User group going. If you just pay dues, YOU AIN'T A MEMBER!!! If you don't vote, help in running the group, or share the load in some way, some day there will not be USER GROUPS, BBS's, NEWSLETTERS, SOFTWARE, BUSINESSES, ETC.....

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# BITS and BYTES

GESSO PRODUCTS- of California,  
 has sent an EPROM PROGRAMMER to  
 RMG Enterprises on approval and  
 will be at the May meeting. If  
 it is approved, the group will  
 be able to program our own cart-  
 ridges with up to 16K programs.  
 BOB ORRFELT of GESSO is also  
 working on a manual that will  
 include a complete disassembly  
 of the 2058 and the SPECTRUN, as  
 well as info on how to get more  
 out of your 2058. We will keep  
 you posted on his progress.

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$$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}, \quad \frac{1}{2} \times \frac{1}{3} = \frac{1}{6}, \quad \frac{1}{2} \times \frac{1}{4} = \frac{1}{8}, \quad \frac{1}{2} \times \frac{1}{5} = \frac{1}{10}, \quad \frac{1}{2} \times \frac{1}{6} = \frac{1}{12}, \quad \frac{1}{2} \times \frac{1}{7} = \frac{1}{14}, \quad \frac{1}{2} \times \frac{1}{8} = \frac{1}{16}, \quad \frac{1}{2} \times \frac{1}{9} = \frac{1}{18}, \quad \frac{1}{2} \times \frac{1}{10} = \frac{1}{20}, \quad \frac{1}{2} \times \frac{1}{11} = \frac{1}{22}, \quad \frac{1}{2} \times \frac{1}{12} = \frac{1}{24}, \quad \frac{1}{2} \times \frac{1}{13} = \frac{1}{26}, \quad \frac{1}{2} \times \frac{1}{14} = \frac{1}{28}, \quad \frac{1}{2} \times \frac{1}{15} = \frac{1}{30}, \quad \frac{1}{2} \times \frac{1}{16} = \frac{1}{32}, \quad \frac{1}{2} \times \frac{1}{17} = \frac{1}{34}, \quad \frac{1}{2} \times \frac{1}{18} = \frac{1}{36}, \quad \frac{1}{2} \times \frac{1}{19} = \frac{1}{38}, \quad \frac{1}{2} \times \frac{1}{20} = \frac{1}{40}$$

RADIO SHACK- sold out their \$995 X,Y Plotter for an unbelievable \$195. At least two of our members, DENNIS JURRIES and DICK WAGNER, purchased them to work with. Dennis has his working (see item elsewhere this issue) and will have it at the MAY meeting.

Well, I am going to quit for this time, but I'll be back next time with lots more news (all good, I hope).

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 $\frac{1}{17}$

[illegible]

PRO/FILE 2068  
FOR THE A & J

This month I will explain the four lines that must be altered and show you the actual altered lines before and after to help you make the change-over yourself in order to make PROFILE 2068 run on the A & J MICRO-DRIVE. As I said, there are only four lines to change, two in the LOADER program and two in the PRIMARY program.

You must first start the LOADING process by LOAD "". Then, as soon as you see the screen appear that says the program is LOADING please wait, HIT BREAK and STOP THE TAPE. Press the ENTER key and you will see the LOADER PROGRAM on the screen. It will look like the one below. Study #1 and #2. Change the lines to read exactly like #2. As soon as this is done, put a new FORMATTED WAFER in your drive and SAVE the LOADER PROGRAM by using the direct command: "SAVE "@1,pr"LINE 1. After SAVEing the LOADER, reset the 2068 (turn it off and back on), and rewind the tape and again LOAD the program, this time do not stop it. As soon as the program is LOADED, you will see the prompt asking if you want to LOAD or CREATE a file. At this time, you will press DELETE to get rid of the left quotes and then press STOP and ENTER. This will STOP the Program so that you can make the changes.

After you have made the changes to the lines as shown below, you will SAVE the revised program by using GO TO 8000.

There you have it! A microdrive  
operating version of PROFILE  
2068.

To SAVE files from the program, just remember to use the micro-drive command (i.e. - "a1, file--name) when the prompt asks you for a name for the file that you wish to SAVE.

IMPORTANT NOTE: IF YOU CAN'T  
READ ANYTHING WHEN YOU STOP THE  
PROGRAM OR THE LOADER, IT IS  
BECAUSE THE PAPER AND THE INK  
ARE THE SAME COLOR. YOU MUST  
TYPE IN THE COMMAND: "INK 7" AND  
PRESS ENTER TWICE. THEN YOU CAN  
READ THE LISTING.

## LISTING #1

```

1 BORDER 0
2 PAPER 0
10 CLEAR 63487
30 PRINT AT 5,8; PAPER 1; INK
7;"* PRO/FILE 2068 *";
40 PRINT AT 7,4; INK 7;"© 1984
BY THOMAS B. WOODS";AT 10,11; I
NK 6;"P.O. Box 64";AT 11,7; INK
6;"Jefferson, NH 03583";AT 19,7;
PAPER 1; INK 6; FLASH 1;"LOADIN
G"; FLASH 0; INK 6; PAPER 0;" Pl
ease wait";AT 0,0: LOAD "p/f"COD
E 63488,2046
50 LOAD "pro/file"

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# NOTES

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1 BORDER 0
2 PAPER 0
10 CLEAR 63487
30 PRINT AT 5,8; PAPER 1; INK
7;"* PRO/FILE 2068 *";
40 PRINT AT 7,4; INK 7;"© 1984
  BY THOMAS B. WOODS";AT 10,11; I
NK 6;"P.O. Box 64";AT 11,7; INK
6;"Jefferson, NH 03583";AT 19,7;
  PAPER 1; INK 6; FLASH 1;"LOADIN
G"; FLASH 0; INK 6; PAPER 0;"Pl
  ease wait";AT 0,0; LOAD "@p/f"CO
DE 63488,2046
50 LOAD "@pro"

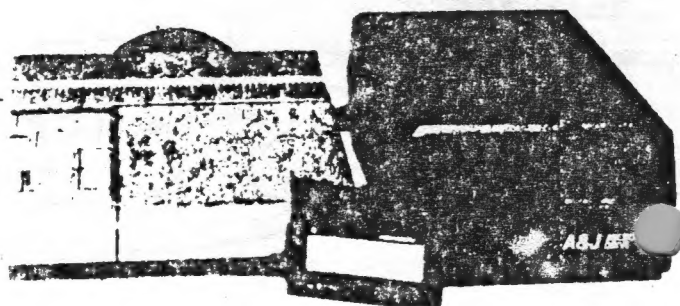
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PRIMARY PROGRAM #1

```
8000>SAVE "p/f"CODE 63488,2046
8010 SAVE "pro/file" LINE 9995
```

PRIMARY PROGRAM #2

```
8000>SAVE "e2,p/f"CODE 63488,204
6
8010 SAVE "e3,pro" LINE 9995
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**A&J MODEL 2000**

$$\frac{2}{3} \times \frac{2}{3} = \frac{2 \times 2}{3 \times 3} = \frac{4}{9}$$

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# HARDWARE

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A Long Cable For 2040 Printers  
Dick Wagner

The short cable between interface and printer has been a major complaint with the Timex printer. I decided something had to be done to fit the printer into my limited desk space. Now I have a 3ft. replacement cable to permit better printer placement. I elected to make a cable replacement because it was easier than making an extension cable between computer and interface. The display of this modification at the April User Group meeting drew many questions of how to do it. This article is an explanation of the steps I use.

Essential tools- Philips screw driver, 27-30 watt soldering iron (no soldering gun!), small diameter resin core solder, wire cutter, solder sucker, needle nose pliers, knife, wire insulation stripper. Most of these can be purchased at Radio Shack. Also a heavy dull point needle, small vise, and 2, 1/4 x 3/4 bolts and nuts.

Material- 7 wire shielded cable, color coded multi-strand wire. I use cable with this identification- B83208 AWM STYLE 2464. The diameter is important, not over 0.225 inch.

Operation- remove 2 screws in the interface base. Note where the machine screw was removed. Disassemble interface and make a sketch of the 8 holes where the cable is soldered. Orient the sketch by showing the IC. Number the holes and tabulate wire colors. Unsolder the cable. Remove excess solder at each hole with solder sucker and be sure holes are clear and there are no solder bridges between pads. Use the needle to help smooth the solder at hole edges.

Remove the 2 ceramic radio interference tubes from the cable. Do not separate from sponge pad. Measure the length of wires beyond the end of insulation sheath and the length from strain relief bushing to end of sheath. Make a sketch of these dimensions. I use 60 mm to strain relief and 20 mm for wire length.

The printer is next. Remove 4 screws from the base and carefully turn right side up. Separate top from base. Carefully lift strain relief and cable from slot. Lift printer circuit board from base (don't lift by printer mechanism). Bolt the mechanism with 2- 1/4x3/4 bolts and nuts at opposite corners. Don't be fooled by the mechanism not appearing to be loose; they will separate before you finish and could cause damage.

Unsolder the wires and clean off excess solder at each hole. Be sure holes are clear. Try a needle at each hole, from the solder side. Twisting the needle may help to clear rough edges.

Make a sketch of the row with 9 holes where cable is located, plus the ground wire hole. Orient your sketch and number the holes. Make a table of numbers and corresponding wire colors.

Make a sketch of cable relief location and length of wires. I use 48 mm for wire length and strain relief is at the end of insulating sheath.

To remove strain reliefs do this carefully-Use needle nose pliers to compress sides of sleeve at various locations. The slotted thin end should slide on the sheath when pushed. Next work the solid end by pushing each way with pliers, using the groove and end. If necessary slide the needle point between the sheath and strain relief, using great care because the groove has thin walls. Force the strain relief off with plier tips in the groove.

Cut cable to length. You will loose about 5 inches for cable inside equipment. I use 36 to 40 inches of cable. Carefully make cuts around the sheath to expose wire at required dimensions. Do this lightly as the shield is foil with a 7-wire conductor. Bend the cable each time to expose the shield if the cut is deep enough. The sheath will slide off. Trim shield away, being careful of the conductor.

Remove about 1/8 inch of insulation from each wire, don't nick any wires as they can break. Smooth each end so wires are in place and nice and tight. Put a touch of solder on each, only enough to hold wires together. Too much will make wires too big to go in circuit board holes. Do the same with the ground wire.

Now compare the cable wire colors with the original charts. If they are not the same note the color substitutions. The cable I used has white in place of yellow.

Now install strain reliefs. Note the groove has a flat. This will go toward the case half without a cut-out. The interface end has the flat down while the printer end has the flat up. It isn't mandatory but the cable lays better this way. Moisten the sheath and carefully force the strain reliefs into position according to your sketches.

(cont. next page)

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Solder cable wires in correct holes, being very sure none of the little wires spread out and don't go in the holes. They can short adjacent pads. Check with a magnifying glass if any look questionable. Don't forget to install the 2 ceramic sleeves on the cable that fits the interface before soldering. To assemble the printer, remove the 2 bolts and place the circuit board on the base, fitting the 4 plastic supports properly with the rubber bushings. Press cable and strain relief in the cable slot, place cover over the base, turn over and install 4 screws. Start screws with fingers and then screw driver.

To assemble interface, be sure the 2 ceramic sleeves drop in the slot along with the cable and strain relief. Place bottom cover over the parts, being sure the circuit board and grounding spring is properly located. Install machine screw in the end that holds the spring, and the coarse thread screw in the opposite corner.

Now test for proper operation.

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## FLASH!

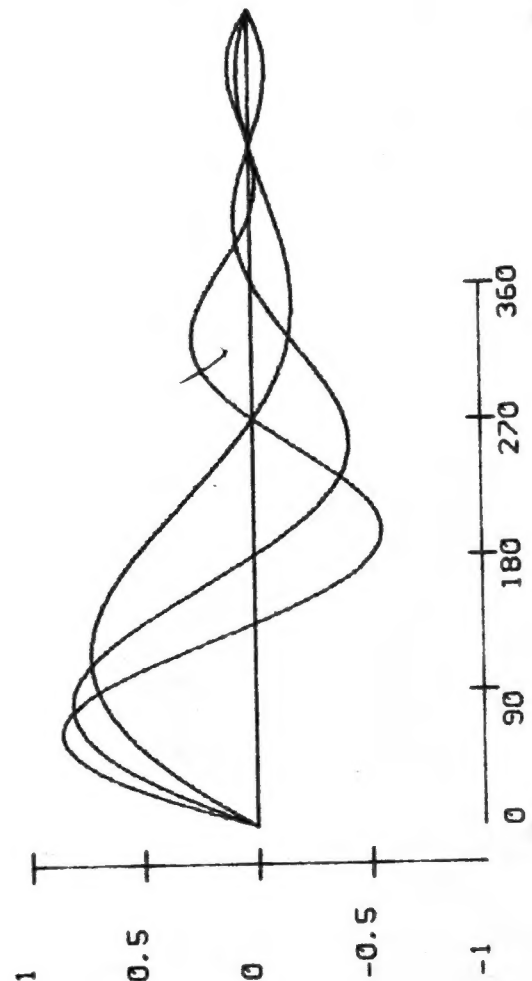
Here we have a sample program and the results as printed and plotted(?) on DENNIS JURRIES' RADIO SHACK PLOTTER.

Thanks Dennis!!!!

```

10 REM Sample Program (Sine Curve Plot)
20 LPRINT "I1500,1000"
30 LET dr=ATN(1)/45: LET d=0
40 FOR n=1 TO 2 STEP .5
50 LET r=300
60 FOR i=0 TO 360 STEP 2
70 LET x=i*3: LET y=INT(r*SIN(i*n*dr))
80 LPRINT "D";x;",";y
90 LET r=r-2: NEXT i: NEXT n
100 LET d$="0": LET x=0
110 LPRINT "M0,-300"
120 FOR i=1 TO 5
130 LPRINT "M";x;",";-350"
140 LPRINT "P";d$
150 LET d=d+90: LET d$=STR$ d: LET x=i*180-50: NEXT i
160 LPRINT "M-50,-300": LPRINT "X0,150,4"
170 FOR i=300 TO -300 STEP -150
180 READ d: LPRINT "M-200,";i
190 LPRINT "P";d: NEXT i
192 LPRINT "M0,-300": LPRINT "X1,180,4"
195 STOP
200 DATA 1,.5,0,-.5,-1

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## LIBRARY NOTES

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You may not be aware of it but we have at YOUR disposal and for YOUR use a very large LIBRARY. I know that a lot of you do use it but more of you do not.

We have, this time, at least 18 different NEWSLETTERS arriving each month. As EDITOR of The Plotter, I do my best to glean the best of the current news from each of these, but there are only so many hours in the day and so many days in the month and I do not get more than 2/3s of them scanned each month. We do try to enter the highlights of each issue into the INDEX that we now have on tape as they come in, thus keeping a somewhat current list of what is in the LIBRARY. If any of you have PRO/FILE 2068 and would like a copy of the INDEX, just call 655-7484 to see about getting your copy.

We also have a lot of magazines and books available to be checked out.

We are also hoping to see our tape LIBRARY grow in the 2068 section. We have some programs on tape, but we would like to see more.

IT'S YOUR LIBRARY-- USE IT!!!!

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## AN INVERSE PROBLEM- SOLVED!

A SOLUTION TO A 2068 PROBLEM  
by DICK WAGNER

While COPYING a program, I somehow developed an INVERSE VIDEO condition well into the program. It showed up as inverted after ENTERING each time. Efforts to clean up the program seemed futile.

The problem was solved by DELETING the last good line and all larger numbered lines. The program was then SAVED, the computer was cleared with a NEW and the program was reLOADED. The computer was thus cleared of the lockup, and the program SAVED except for the one good line DELETED.

## MACHINE CODE SPECIAL INTEREST GROUP

by Dennis Jurries

For quite sometime many of us have talked about starting a machine code special interest group. Well this is the time. Starting this upcoming meeting after the regular meeting at about 9:00 PM we will meet and discuss machine code. Anyone can sit in and listen but only those who meet the following conditions will be allowed to join any discussion.

1. Must have a MC assembler.
2. Must have a MC disassembler.
3. Must know how to count and convert Hex to Binary to Decimal.
4. Must have a general knowledge of opcodes and understanding of same.

The first program we will try writing will be one to color in regular shaped objects. The logic of the writing of such a program may go the following way

The display file starts at address 16384 and ends at 22527. This is for 24 lines with 32 (8) bit blocks per line. The attributes file starts at address 22528 and ends at 23295. This is for 24 lines with the last 2\*32 bytes handling the last 2 lines. A good start is to search the screen until a location byte is other than 0 in the display file. Decode that byte and change it until everything from that bit on in the byte is a filled solid. Look at the next byte, if it is zero then change it to 255, and so forth until the next nonzero byte is found. Decode this second nonzero byte so that everything to the right of the bit is filled in. Continue on to the next line and so on. You will have to set up a counter so that you do not go past the display file area. You may also have to change the attributes to change the color. Next draw a circle and check out your program.

We will discuss this program approach in the next meeting and then work on the program until the following meeting at which time we will each turn in a copy of the listing of our program opcodes.

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